E5061B/E5063A Security Feature

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Contacting Agilent Sales and Service Offices

Assistance with test and measurements needs and information on finding local Agilent offices are available on the internet at, *http://www.agilent.com/find/assist*. If you do not have access to the internet, please contact your field engineer.

Note: In any correspondence or telephone conversations, refer to the signal generator by its model number and full serial number. With this information, the Agilent representative can determine whether your unit is still within its warranty period.

Product Declassification and Security

Model Number(s): E5061B/E5063A
Product Name: Network Analyzer
Product Family Name: ENA

This document describes instrument security features and the steps to declassify an instrument through memory sanitization or removal.

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Terms and Definitions

Definitions:

Clearing – Clearing is the process of eradicating the data on media before reusing the media so that the data can no longer be retrieved using the standard interfaces on the instrument. Clearing is typically used when the instrument is to remain in an environment with an acceptable level of protection.

Sanitization – Sanitization is the process of removing or eradicating stored data so that the data cannot be recovered using any known technology. Instrument sanitization is typically required when an instrument is moved from a secure to a non-secure environment such as when it is returned to the factory for calibration. Agilent memory sanitization procedures are designed for customers who need to meet the requirements specified by the US Defense Security Service (DSS). These requirements are outlined in the "Clearing and Sanitization Matrix" issued by the Cognizant Security Agency (CSA) and referenced in National Industrial Security Program Operating Manual (NISPOM) DoD 5220.22M ISL 01L-1 section 8-301.

Security erase – Security erase is a term that is used to refer to either the clearing or sanitization features of Agilent instruments.

Instrument declassification – A term that refers to procedures that must be undertaken before an instrument can be removed from a secure environment such as is the case when the instrument is returned for calibration. Declassification procedures will include memory sanitization and/or memory removal. Agilent declassification procedures are designed to meet the requirements specified by the DSS NISPOM security document (DoD 5220.22M chapter 8)

Instrument Memory

This section contains information on the types of memory available in your instrument. It explains the size of memory, how it is used, its location, volatility, and the sanitization procedure.

Summary of instrument memory - base instrument

Memory Type and Size	Writable During Normal Operation?	Data Retained When Powered Off?	Purpose/Contents	Data Input Method	Location in Instrument and Remarks	Sanitization Procedure
Main Memory	Yes	No	Windows Operating system memory	Operating system (not user defined)	A50/A60/A70 CPU Module	Cycle power
Media Storage	Yes	Yes	Windows Operating system boot device, factory correction data, and users file including saved traces data, settings, or images.	User-Saved Data Operating system (not user defined)	HDD/SSD assembly	Remove
Memory for DSP module (RAM)	Yes	Yes	Data Processing for measurement	Measurement (not user defined)	A51 DSP Module	Cycle power
Non-volatile Memory (Flash)	No	Yes	Product serial number, Options System calibration data (E5061B) (not user defined calibration data)	Adjustment Program performed by Agilent factory personnel or by calibration labs	A51 DSP Module	N/A (The data is not stored by user under normal operation.)
Non-volatile Memory	No	Yes	Module serial number, Revision number System Calibration Data (E5063A)	Calibration at factory	**E5061B** A1 /A11 Source Module A2 Receiver Module (Opt. 3L5) A3 Receiver Module (Opt. xx5, 50 ohm) A4 Receiver Module (Opt. xx7, 75 ohm) A9 LF Source/Bias Module (Opt. 3L5) **E5063A** A1 Analog Module	N/A (The data is not stored by user under normal operation.)

Memory Clearing, Sanitization and/or Removal Procedures

This section explains how to clear, sanitize, and remove memory from your instrument for all memory types.

<Memory type>

Description and purpose	Main Memory for Windows Operating system memory
Size	Windows XP: 2 GB, Windows 7: 4 GB
Memory clearing	Power rebooting. This is a volatile memory.
Memory sanitization	Power rebooting. This is a volatile memory.
Memory removal	This memory cannot be removed without damaging the instrument
Write protecting	N/A
Memory validation	N/A
Remarks	

Description and purpose	Media Storage (Hard Disk Drive/Solid State Drive)
Size	Windows XP/HDD:160 GB, Windows 7/SSD: 80 GB
Memory clearing	N/A
Memory sanitization	N/A
Memory removal	The storage drive needs to be removed and replaced with a new or unused hard disk drive part as per the service manual.
Write protecting	N/A
Memory validation	N/A
Remarks	

Description and purpose	Memory for DSP (RAM) for A51 DSP Module
Size	1.8M bit
Memory clearing	Power rebooting. This is a volatile memory.
Memory sanitization	Power rebooting. This is a volatile memory.
Memory removal	This memory cannot be removed without damaging the instrument.
Write protecting	N/A
Memory validation	N/A
Remarks	

Description and purpose	Non-volatile memory (Flash) for A51 DSP Module. This memory is for product serial number and option. The system calibration data are also stored in the E5063A. (Any user data is not stored in these memory)
Size	64 MB
Memory clearing	N/A
Memory sanitization	N/A
Memory removal	The A51 DSM module needs to be removed and replaced with a new or unused module as per the service manual. See E5061B/E5063A Service Manual for more detail information on the procedure as well as the replacement parts.
Write protecting	N/A
Memory validation	N/A
Remarks	

Description and purpose	E5061B Non-volatile memory (EEPROM) for A1, A2, A3, A4, A9 and A11 Modules. These memories are for board serial number, board revision number. (Any user data is not stored in these memories)
Size	256 M Bit
Memory clearing	N/A
Memory sanitization	N/A
Memory removal	The E5061B A1, A2, A3, A4, A9 and A11 modules need to be removed and replaced with a new or unused module as per the service manual. See the E5061B Service Manual for more detail information on the procedure as well as the replacement parts.
Write protecting	N/A
Memory validation	N/A
Remarks	

Description and purpose	E5063A Non-volatile memory (flash) for A1 Modules. These memories are for board serial number, board revision number, and system calibration data.
Size	2 MB
Memory clearing	N/A
Memory sanitization	N/A
Memory removal	The E5063A A1 modules need to be removed and replaced with a new or unused module as per the service manual. See the E5063A Service Manual for more detail information on the procedure as well as the replacement parts.
Write protecting	N/A
Memory validation	N/A
Remarks	

Storage removal (E5063A/E5061B-020 only for E5061B)

Because it is virtually impossible to completely and selectively erase all user data on a hard drive without also destroying the operating system, the best method for maintaining security when the E5061B/E5063A must be removed from a secure area is to replace the storage with a "non-secure" hard drive, i.e. a drive that has never had any sensitive data placed on it. This allows the E5061B/E5063A to still function properly in non-secured areas or for use when servicing.
The E5061B-020 and all E5063A have a removable storage on the rear panel. Agilent has available a pre-configured storage for the E5061B/E5063A that must be purchased in order for this security method to work. A spare disk is available as below.

Product Number	Windows License (See the Windows label on the rear panel)	Agilent Part Number
E5061B	Windows Vista Business	Not Assigned
	Windows XP Pro for Embedded Systems	E5061-65003
	Windows Embedded Standard 7	E5061-65004
E5063A	Windows Embedded Standard 7	E5063-65001

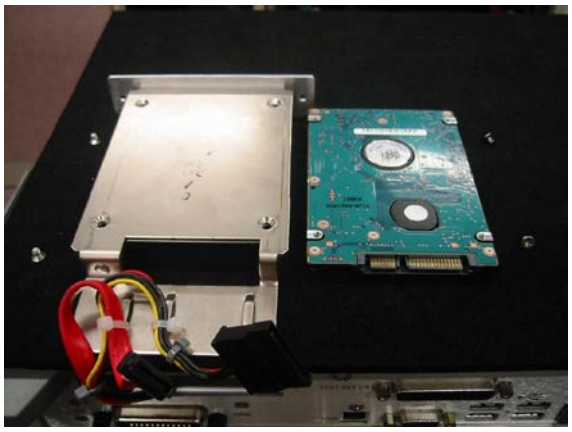
Note: The limited number of times for removing/connecting is 50 times.

Hard disk removal procedure:

These steps should be followed to maintain security:

1. Clearly mark the spare hard drive as "Unsecured!"
2. If there is the file named ***.lic** under **E:\License** directory, copy it into your USB memory. This file contains software option information.
3. Remove the two screws on the rear panel. Remove the case with the hard drive and put it on the top panel. (It is recommended to place a cushion on the top panel to put the hard drive.)

4. Disconnect both connectors from the HDD, and then remove the four screws holding the hard drive to the case.



5. Replace the original “Secured” hard drive with the spare "Unsecured" hard drive.
6. Connect an external keyboard and mouse to the connectors on the E5061B. Turn on the E5061B.
7. Press [Macro Setup] and press **Load Project...** in the softkey menu.
8. A dialog box will appear for you to select the program to load. Select **RestoreSysCorFile.vba** from the **D:\Agilent\Servic**e folder and then press the Open button.
9. Press [Macro Run]. The **RestoreSysCorFile** dialog box will appear. Click OK.
10. Place the **gen.lic** files into the **E:\License** directory. Manually create the License directory if the directory does not exist.

The E5061B/E5063A can now be used elsewhere or sent for servicing without fear of leaking any sensitive information.

Storage disk re-installation procedure:

Once the E5061B/E5063A is returned to the secured area, follow the steps listed below. Any servicing of the E5061B/E5063A may include the regeneration of correction constants.
1. Remove the spare “Unsecured” hard drive and replace with the original “Secured” hard drive
2. Connect the external keyboard and mouse to the connectors on the E5061B/E5063A. Turn on the E5061B/E5063A.
3. Press [Macro Setup] and press **Load Project...** in the softkey menu.
4. A dialog box will appear for you to select the program to load. **Select RestoreSysCorFile.vba** from the **D:\Agilent\Service** folder and then press the Open button.
5. Press [Macro Run]. The RestoreSysCorFile dialog box will appear. Click OK.
6. Copy the **gen.lic** files from your USB memory into the **E:\License** directory. Manually create the License directory if the directory does not exist.

Note: If your secured hard disk does not contain the “RestoreSysCorFile.vba” program, copy the program from the unsecured hard disk.

User and Remote Interface Security Measures

Screen and Annotation Blanking

The frequency-blanking feature is available. This function provides three security levels:
"OFF" during normal operation;
"Low" deletes frequency information from the display, but can be turned "OFF" by front panel operation; and
"High" deletes frequency information from the display, and cannot be turned "OFF" except rebooting.
The operator can perform the following keystrokes to control this frequency-blanking feature, [System] > Service Menu > Security Level > None | Low | High,

or set the levels by the following SCPI command:

:SYSTem:SECurity:LEVel {NONE|LOW|HIGH}

Note:
Any SCPI/COM commands that read the frequency data are not influenced by this function. All commands can read frequency data regardless of the security level.

USB Mass Storage Device Security

E5061B Windows XP

Users can disable any USB-compatible external mass storage devices in order to ensure confidentiality. The following procedure shows how to disable a USB Mass Storage Device.

1. [Save/Recall] > Explorer….
2. Double-click "DisableUsbStorage.exe" from D"\Agilent\Service.
3. Click OK in the SUCCEEDED message window that appears. If any USB mass storage device is connected to the E5061B/E5063A under this condition, the Hardware Wizard will start, but the USB mass storage device will not work.

The following procedure shows how to enable a USB Mass Storage Device.

1. [Save/Recall] > Explorer….
2. Double-click "EnableUsbStorage.exe" from D"\Agilent\Service.
3. Click OK in the SUCCEEDED message window that appears.

Note: If you do not want any USB mass storage device to ever be enabled at any time, delete EnableUsbStorage.exe from the E5061B/E5063A after DisableUsbStorage.exe has been completed. These two programs will not be recovered automatically by applying the firmware update or other such action. Before deleting any of these programs, you should make a backup copy to a recording medium such as a floppy disk and store it separately.

Note: If the program fails to run, it is possible that you have not logged in as a user in the Administrators Group. When you want to execute any of the above programs, make sure to log in as a user in the Administrators Group.

E5063A/E5061B Windows 7

Refer to the following site.
http://ena.tm.agilent.com/e5063a/manuals/webhelp/eng/index.htm#using_windows/enablingdisabling_usb_storage.htm

Remote Access Interfaces

The user is responsible for providing security for the I/O ports for remote access by controlling physical access to the I/O ports. The I/O ports must be controlled because they provide access to all user settings, user states and the display image.

The I/O ports include USB, GPIB and LAN.

The LAN port provides the following services, which can be selectively disabled:

a) http
b) ftp
c) sockets
d) telnet

There is also a 'ping' service, which presently cannot be selectively disabled. The concern might be that it is possible to discover IP addresses of connected instruments in order to query their setups over the net or break into the code.